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ABSTRACT

Described is a K-12 integrative arts program of the Schmerenbeck Educational Centre, Johannesburg, South Africa, designed to help gifted and talented children develop an understanding of the nature of creative thinking as expressed through different art forms. The report discusses how the program defines talent; how gifted students are identified for program participation; the role that creative thinking plays in child development; the integrative model of education used; educational strategies used to develop creative thinking from the four perspectives of perception, affect, cognition, and behavior; course content; and program evaluation. The program offers skill based courses in visual perception, exploration of sound and movement, communication, and learning and thinking skills. Also offered are a series of optional workshops in different art disciplines, including drama, dance, music, and film. In some experimental sessions professional artists and teachers worked with the students. Concepts and ideas initiated by students are explored through sensory stimulation, creative problem solving, and reflection. Both teachers and students rated the program very highly. (RM)

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TITLE: D E V E L O P I N G C R E A T I V E T H I N K I N G T H R O U G H

A N I N T E G R A T E D A R T S P R O G R A M M E

F O R T A L E N T E D C H I L D R E N.

PAPER PRESENTED AT THE "CONFERENCE ON THINKING"
HARVARD UNIVERSITY.
CAMBRIDGE, MASSACHUSETTS, U.S.A.
20 TO 23 AUGUST 1984.

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1 JAN SMUTS AVENUE, JOHANNESBURG, 2001.
SOUTH AFRICA.

SO 016 767

ABSTRACT:

The Schmerenbeck Educational Centre provides extra-mural enrichment to challenge gifted and talented children. In terms of a broader concept of identification, the Centre differentiated a Creative Arts Programme in 1983 for talented children. This aims to extend children beyond their technical competence to develop creative excellence; to encourage psychological growth in developing perceptual, cultural, social and self-awareness; to develop aesthetic judgement, critical thinking and self-evaluation; and to develop awareness of the process of creative thinking itself.

The design of the programme included workshops in several art disciplines (fine art, dance, music, drama, writing, etc.); Integrative Courses (Communication, Study, Thinking, Research Skills); and Integrated Art (Creativity) workshops.

PRECIS:

This paper will discuss the nature and development of creative thinking in relation to expression and communication in the arts based on the results of an evaluation study of an Integrated Arts Programme.

In the Integrated Arts Workshops, professional artists and teachers are brought into contact with groups of talented children to give exposure, encourage participation and develop understanding of the nature of creative thinking as expressed through different art forms. Herein, a concept or idea, initiated by the children, is explored through sensory stimulation (developing perceptual skills); through creative problem-solving (developing cognitive processes); and through reflection (developing affective processes).

1. OVERVIEW.

1.1. THE CONCEPT OF "TALENT": THE "TALENT TRAP".

Concepts of Creativity and Giftedness have generated much controversy and research. Many contemporary views integrate creativity as a distinguishing characteristic of giftedness, which is seen as a dynamic developmental process and not merely a static score on any form of psychometric assessment. This debate has led to the distinguishing of "talent", seen as a specific area of competence or achievement, from that of "gifted", which is often seen in terms of general intellectual ability. As this distinction relegates the "talented" to a somewhat inferior or incomplete ability, the term "creative" has also been added, to refer to those who do not score highly on tests of general intelligence, and are said to possess "divergent thinking" abilities. Attempts to classify "types" or "categories" in themselves lack validity and can only be justified in terms of determining distinguishing characteristics that can be developed by appropriate education programmes. The U.S. State guidelines on distinguishing "types" of giftedness that should receive special programmes, as stated in the Marland Report (1972), differentiate between the "general intellectual ability", "creative or productive thinking", and "talent in the visual and performing arts." (in Clendening 1980)

De Bono (1982) has questioned whether a superior intelligence (high I.Q. score) implies superior thinking, and refers to this as the "intelligence trap", characterised by valuing error-free thinking, quickness of response, finite answers to problems, and arrogance of ego. He therefore sees it as necessary that highly intelligent people are deliberately taught the skills of thinking - "We change the rules from a requirement to be quick, clever, and right to a requirement to be wise, effective, and exploratory."(p.5)

In a similar way, it can also be questioned whether highly "talented" people are particularly creative. Often, "talent" is used to refer to a type of achievement in a defined subject area - "he has a talent for Science", or to a specific ability - "the mathematically talented", but most commonly the word

refers to areas of competence in the creative arts. This achievement is evaluated in terms of prec onceived standards, assessed by either achievement tests or technical skill. This does not imply that such individuals are competent in creative thinking skills - a "talent trap" can also be postulated. This "talent trap" has similar values to the "intelligence trap" - accuracy, exactness, performance according to preconceived standards, technical skills as ends in themselves, and evaluation in terms of products.

This idea formed one of the basic principles leading to the development of an appropriate educational programme to stimulate creative thinking in children who were highly talented in the creative arts.

1.2. CONTEXT OF THE PROGRAMME: IDENTIFYING "TALENT".

The Schmerenbeck Educational Centre creates extra-mural enrichment programmes for gifted and talented children who are not appropriately challenged in the regular school classroom. In terms of its multifaceted concept of giftedness, and a multidimensional approach to identification, it creates flexible learning opportunities, continually modified to meed the needs of the many unique children within it. In trying to meet these complex objectives, it continually reviews its identification procedure and evaluates its learning programmes through on-going research.

The identification includes the creation of a profile on each applicant, wherein information from parents, teachers, psychologists, psychometricians and the child/pupil himself is gathered through a series of questionaires, checklists and tests. This may also include interviews or auditions or reviews of work. A comprehensive picture of the child is built to determine how he/she is developing in all areas (intellectual, social, emotional, physical) and how he/she is functioning in an educational context. This generates priorities for attention, which may range from challenging interests through focus on high level thinking skills plus remediation for a learning disability, to communcation skills, depending on the child's needs, strengths and weaknesses. The identification is therefore not merely a discrete "label" but should indic ate possible areas of growth.

The concept of a special programme for the "talented" in the arts, arose out of

a review of the identification process. Previously, as the centre grew from a small parents association for the gifted in 1971 (the Association for the Education of Gifted Children in South Africa) who created challenging courses for their motivated children, highly talented children were excluded from the programme because they did not meet the discrete criteria of scores on intelligence tests (set at about 130-135 I.Q.). As this came to be questioned, more comprehensive behavioural criteria were included (Williams Scale, "Gift" Questionaire) and tests of creative thinking introduced (Torrance). Talented children could then be identified by their specific talents and creative thinking abilities, and a programme designed to meet their unique characteristics and needs. (in Maker, 1982)

At present the Centre operates four programmes: the "Microscapes" programme for preschool and grade 1 and 2 children who have high potential; the "Projects Plus Programme" for gifted children; the "High School Extension Programme" for motivated Grade 10 to 12 students, and the "Creative Arts Programme" for children talented in the arts. Other than the specific interests of these groups, certain courses are common to all the programmes, termed "Integrative Courses" (discussed below).

2. THE ROLE OF CREATIVE THINKING IN DEVELOPMENT: THEORETICAL BACKGROUND.

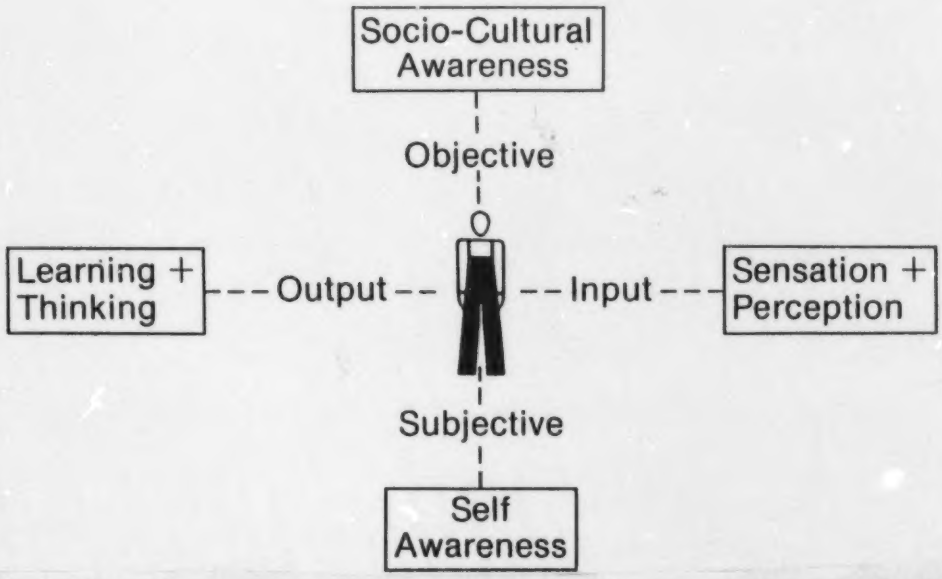
2.1. DEVELOPMENT OF THE CREATIVE PERSONALITY.

The human being experiences reality as an integrated whole: his senses are alive to input from the world; he reacts to this subjectively in his selective self-awareness; he integrates the information into his existing knowledge and ways of thinking; and thereby formulates his socio-cultural awareness into a way of understanding and interpreting his world.

These aspects of experience, his perception, self-awareness, learning and thinking, and socio-cultural awareness, constitute his relationship with and concepts of both his subjective and objective reality. (Diagram 1)

Diagram 1:

ASPECTS OF HUMAN EXPERIENCE

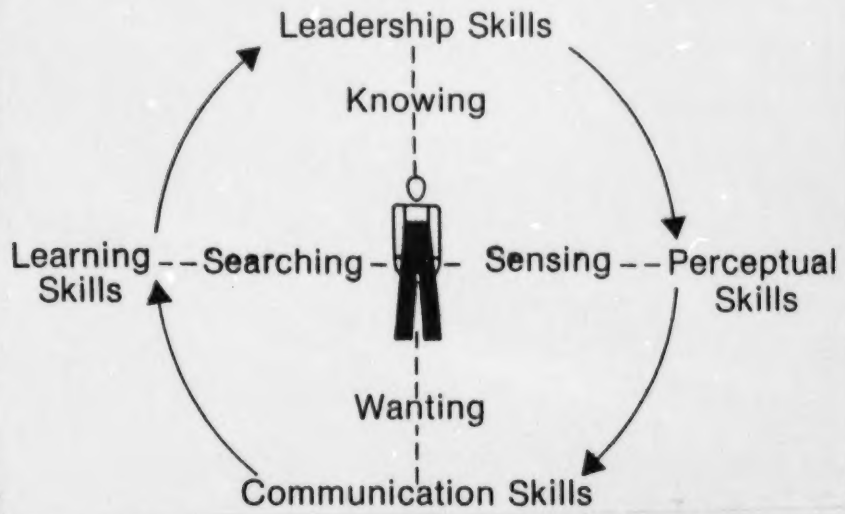


When a child enters a learning situation, he has a particular developmental pattern determining his readiness, receptivity, level of understanding, and expectations. The degree to which he is estranged from his inner experience (demonstrated in rigid, stereotyped responses and mechanical control) will vary in terms of external pressures to conform to appropriate norms, ideas, behaviour patterns and emotional reactions in any situation or culture. It is the degree of passive receptivity or active participation that determines whether the "moulding" of our sub-cultures become blocks or inhibitions to creativity, or free our thinking. In this sense, education should be breaking down such blocks, and encouraging the active "sculpturing" of experience - in practice, it usually inhibits creativity and demands conformity.

Man's potential for knowledge and creativity is limited only in terms of his confidence in his abilities and his motivation. In the process of development, the areas of experience can be developed by building perceptual, communication, learning and leadership (in the sense of decision-making) skills, which form part of the total personality. By bringing such processes into awareness, these skills can overcome the blocks previously established and therefore act as "gateways" to awareness and creative growth. (Diagram 2).

Diagram 2:

THE PROCESS OF DEVELOPMENT



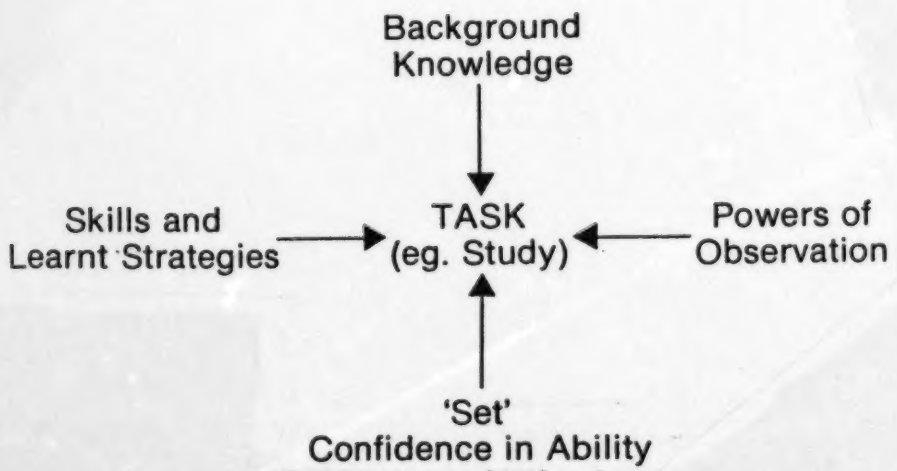
Maslow(1959) has distinguished between "primary creativity", which is the heritage of every human being, found in all healthy children, and largely buried beneath defence mechanisms; and "secondary creativity", which is a deliberate and largely convergent type of creativity of a disciplined nature. He sees "special talent creativeness" as a concentration of creative energy in one area. Although he noted that education did little to allow primary creativity, which stems from unconscious processes to be developed, he saw education as a means of making the child more conscious or such processes and aware of himself, and thereby dispelling fear and inhibition to allow the creativity to take place from a primary level. He also referred to "self-actualising creativeness", which is a tendency to live and think creatively, and represents a special kind of perception and active participation in life. Such creativity is an integrated part of the personality. (in Parnes, 1982 and Treffinger et al 1982) There have been many studies done on the creative personality that show a range of characteristics. Getzels et al (1976) studied productive artists, and identified developed abilities to sense problems, to find problems and to clarify problems. Torrance (1979) has drawn up a comprehensive list of characteristics that differentiate highly creative persons from less creative ones. Research has shown that the following characterises the creative personality:

- have their energy field accessible
- have ability to tap and release unconscious and preconscious thought
- be more sensitive, enthusiastic and impulsive
- be able to withstand being thought of as abnorm l or eccentric
- greater independence from environmental influences
- have a rich and varied imagination, fantasy life, daydreaming
- take risks in ideas and tolerate ambiguity
- enjoy complex and novel ideas and problems
- sense gaps in knowledge, new possibilities
- have a sense of humour, respond spontaneously
- internal locus of evaluation or control.

A "creative" person is extremely alert perceptually, sensitive to aesthetic stimuli, builds unique ideas, solves problems they set themselves, pushes the boundaries of their thinking, has confidence in their inner resources, enjoys investigating the nature of things. The way in which a child approaches a task or problem will depend on his level of competence in all these skills, his powers of observation, confidence in ability, learnt strategies and background knowledge. (Diagram 3)

Diagram 3:

APPROACH TO PROBLEM SOLVING



Creativity therefore incorporates all aspects of the personality.

2.2. THE INTEGRATIVE MODEL OF EDUCATION.

Education is not merely working towards some type of "preparation" for life, a distant goal to which the present is sacrificed, but has direct relevance to immediate, present experience. This perspective focusses on the present (perceptual awareness); the self (self-awareness); expanding thinking

(socio-cultural awareness); on active participation and creative insight. The whole person is integrated in learning, and the very process of learning, the patterns of communication and activities, in addition to the content, equip students with skills and strategies.

Concepts of "being creative" have been misunderstood by many keen teachers, ranging from strict instructions to "be creative" (a tree is always coloured green) to a permissive "do your own thing". Creative processes have both attitudinal, environment and skill components. Getzels and Jackson (1962) distinguish between "creative teaching", which is the presentation of material by the teacher in interesting, novel ways, and "deliberate development of creative behaviour" in the children. Many programmes have been developed to deliberately develop creative behaviour. Instead of merely creating the supportive environment necessary to creativity, that skills of thinking are taught directly (such as the "Cort" Thinking Skills developed by De Bono and his associates at the Cognitive Research Trust in Cambridge, U.K.). Research has been conducted on an evaluation of the effectiveness of these programmes: that done by Parnes (1972) of a longitudinal nature on the programme developed at the Creative Education Foundation showed that an instructor-presented course was more effective than the same course taken as a self-study programme, but that both increased creative behaviour significantly.

Clark (1979) has expanded the Integrative Model of Education wherein four aspects of human functions are seen as a part of the whole person: thinking, sensation, feeling and intuition (developed from the Jung model). Within each area there may be a high level of development: the "Gifted" in the thinking area; the "talented" in the sensation area; the "intuned" in the feeling area; and the "illumined" in the intuitive area. This model serves to illustrate the role of the unconscious processes, particularly that of intuition, which is seen by Maslow and Jung (who spoke of "visionary" processes) to be the core of creativity. It also clarifies the importance of "incubation" (as a technique of creative thinking) or suspension in thought or judgement

over a period of time, to allow the intuitive processes to operate. Programmes show that it is possible to develop creative thinking through training, but in relation to primary creativity or that of self-actualising creativeness (which have intuitive and affective components) all aspects of the unique personality come into play.

3. EDUCATIONAL STRATEGIES TO DEVELOP CREATIVE THINKING.

Creative thinking can be seen from four perspectives - perception, affect, cognition and behaviour - which has led to the development of different educational strategies for their development.

3.1. Perception.

Thinking through the use of sensory images is an underdeveloped skill in most educational programmes. Education appears to value verbal and mathematical thinking, and thereby inhibits the development of perceptual skills, or thinking through sensory images. The awareness of this lack of sensory focus has led to present exploration of sensory perceptions in education, although mostly in the early grades. Perceptual training aims to increase observation, to heighten aesthetic sensitivity, open-up sensory awareness, encourage new ways of seeing and re-experiencing the world, increase imaginative use of visual, aural, tactile, kinesthetic percepts. Educators such as Montesorri (1936) saw the value of teaching young children through sensory means (corresponding to the Piagetian "sensory-motor" stage). But thinking through sensory images is a largely untapped source in general education at higher levels, and one that has been seen to be most usefull in problem-solving. Adams (1974) distinguishes between communication for others, which is disciplined and carefully-structured to communicate information or ideas, and communication for oneself, wherein a drawing or image is a way of exploring the idea, or a way of thinking in itself. In this sense, a deliberate, carefull and accurate representation of an object, or technical competence in drawing, while serving the purpose of communicating information, does not necessarily require creative thinking ability. In this, technical competence is

an end in itself, the percept is reproduced unexpanded, ideas are not explored. This is often taken for creativity, rather than viewed as a basis for expanding thinking. Drawing ability is most useful for graphic representation, re-structuring, playing with ideas and images. However, others see this as an exploration of self, and even as a form of meditation (Franck, 1973). A vital aspect of development in perceptual skills is the growth of aesthetic feelings which govern "inner harmony" and critical judgement relevant to one's daily response to the environment, as stressed by Lindermann and Herberholz (1977). Because of previous conditioning in stereotypes, lack of focus on sensory information, concentration on verbal concepts, training for creativity must include exploration of sensory phenomena, developing observation skills and the manipulation of sensory images.

3.2. Affect.

The emotional nature of a person determines the way in which he will respond to an opportunity for creative activity or thinking. Maslow (1959) sees creativity as a part of the healthy, or integrated personality, whereas others have noted the great genius of creative minds plagued by emotional disturbance, such as von Gogh. The concept of "child-centred education"(Rogers) developed out of the emotionally supportive climate - warmth, acceptance, openness, athenticity, empathy. To allow the emotional freedom to risk ideas and play with images, this non-judgemental and non-presciptive atmosphere appears necessary in developing creativity. De Bono (1982) sees ego-involvement as a barrier to effective thinking wherein defence mechanism inhibit the exploration of an idea and lead to rash solutions and a need to be "correct" or "clever". At the core of this is motivation and expectations. It is necessary to establish open channels of communication and trust and acceptance, to free the mind to explore ideas, and raise to consciousness any fears or inhibitions to creativity. Emotional sensitivity and the heightening of feelings in learning is often neglected in education; many programmes have been developed to foster emotional responses (such as encounter groups,sensitivity training groups, transactional analysis).

3.3. Cognition.

Guilford (1975), while postulating the complex nature of intelligence through his 3 dimensional model, identified a type of thinking ability, termed "divergent" characterised by fluency, flexibility, originality and elaboration (used as criteria in the Torrance Tests of Creative Thinking (1979)). While seeing this as creative thinking ability he also stressed the role of non-intellective traits, such as interest, aesthetic appreciation and tolerance of ambiguity in creativity. Willings (1980) sees creativity in terms of three types of thinking: adaptive (perceiving relationships); elaborative (improving basic ideas); and developmental (awareness, observation, perception). Many new techniques of overcoming blocks in thinking or facilitating the structuring of thinking have been developed, such as Eberle's "Scamper" techniques(1980); Adams "conceptual blockbusting"(1974); Albrecht (1980); Parnes's "creative problem solving"(1972)(Stages of finding facts, problems, ideas, solutions, and acceptance through to a plan of action).

3.4. Behaviour.

As creativity appears to have perceptual, affective and cognitive components, all of these need to be included in programmes designed to stimulate creative behaviour in an integrative model. Renzulli (1981), in viewing creativity as a part of giftedness, stipulates that creative behaviour is specific to situations, modifiable, and influenced greatly by motivation or task-commitment. It is not a general trait, but takes place when the atmosphere is conducive and there is the right balance of determining factors. Torrance (1979) presents a comprehensive model for studying and predicting creative behaviour, where abilities are developed - these include searching for problems; considering many alternatives; original thinking; highlighting the essence; openness; emotional awareness and self-expression; ability to put things in context, combining and synthesizing, richness of imagery; glimpses of infinity; humour and playfulness; unusual visual perspective; kinesthetic and auditory responsiveness. Parnes (1972) speaks of the three "S"'s of Creativity: sensitivity; synergy; and serendipidy.

There is no doubt that creativity is a complex phenomenon, and although attempts have been made to define and classify its nature, it retains that element of mystery and surprise.

In any comprehensive approach to stimulate creative thinking, it appears necessary to overcome inhibitions:

INTERNAL BLOCKS such as limited ways of viewing the world, stereotypes, rash thinking, fears of being incorrect or exposed;

EXTERNAL BLOCKS such as environmental conditions that prescribe ways of thinking and behaving and a judgemental atmosphere.

In addition, programmes to develop creative thinking can focus directly on fostering perceptual, communication and learning skills.

4. A SPECIAL PROGRAMME FOR TALENTED CHILDREN?

4.1. RATIONALE.

The need for a specialised programme arose from three sources:

- The Identification process (as stated).
- Requests for mentors for talented children from the children themselves or parents. Such children were frustrated in the regular arts class by the lack of challenge of teachers who were largely in awe of their technical competence which was advanced and ahead of their peers (one child being told "your work is so excellent that I can't teach you any more, so work on your own" - this child getting 100% as a grade). They were experiencing the same problems as highly gifted children who were not being challenged. In other instances, very creative children were being victimised by both teachers and peers because of their "crazy, way-out ideas", - these children being seen as a threat to the established order of the classroom.
- A concerned committee of academics from various art disciplines who felt that technical competence was seen as an end in itself in art teaching at school and that there was a need for a programme which would "encourage interpersonal and cross-cultural references, elicit responses to the greater environment(natural and man-made and human) and require interdisciplinary investi-

gation. The major focus would be to develop creative thinking processes.

4.2. OBJECTIVES.

The objectives of the Creative Arts Programme are therefore to:

- o provide experiences that increase awareness in any particular art of the act of creating itself.
- o overcome stereotypes, prescriptions or conditioning that prevents the expression of the unique creativity of each child.
- o enrich awareness of the principles of the arts beyond the perfection of any particular technique.
- o stress creative processes rather than products as an attitude to experience and its interpretation rather than ends in themselves.
- o overcome the specialisation and singular interests within any art form by integrating art experiences.

(as stated in the information brochure).

5. INTEGRATIVE PROGRAMMING.

Bearing in mind the conditions necessary for creativity and the flexibility required to meet the needs of unique children, in order to provide an integrative programme for talented children, it is necessary to include: courses designed specifically to develop skills; workshops in the specific art disciplines; creativity or integrated arts workshops.

5.1. Skill-based courses.

Within the context of the programme, courses are offered in:

- o Visual perception - direct training in observation, drawing, graphics, and manipulating concepts from drawing into ideas such as Berger's "Ways of Seeing" (1972),
- o Exploration of Sound and Movement,
- o Communication - such as sociodrama, discussion groups (using Williams(1970), or Transactional Analysis),
- o Learning and Thinking Skills (Cort, Buzan methods).

5.2. Art Workshops.

A series of optional workshops in different art disciplines are offered (drama, dance, fine art, music, film, etc) wherein the focus is on the creative process itself, and technique is seen merely as a means of competently capturing a

creative idea, and the stress is on experimenting, improvising, exploring ideas, concepts, images, in any art form.

5.3. Creativity/Integrated Arts Workshops.

These experimental sessions brought professional artists and teachers into contact with talented children (whose talents may have ranged from art, drama, dance, etc). These were interdisciplinary, explored ideas through different art forms.

6. CREATIVITY (OR INTEGRATED ARTS) WORKSHOPS.

6.1. Objectives.

As well as the general objectives of the creative arts programme, the central objectives of these workshops was to generate creative thinking and communication; to gain an awareness of the creative process itself and an understanding of its communication in different art forms; to develop observation, sensory awareness and sensitivity.

6.2. Teachers.

In each workshop four teachers were drawn from four areas (art, drama, dance, music, literary expression) who saw themselves both as initiators and participators. This required both competence and expertise in the practice and teaching of their chosen art form, plus confidence and self-awareness. They needed a willingness to participate fully in the creative experience themselves and to learn from the perceptions and ideas of the children and the other teachers, while maintaining respect and encouraging authentic relationships (the supportive environment). Other than the techniques/strategies used, these attitudes can be seen as an integral part of the success of such a workshop. In this way, the subtle direction of creative exploration and expression in any one art form was overcome through an integration of creative processes.

6.3. Stages of Creative Activity.

6.3.1. The Initial Session.

Teachers had met before to discuss objectives, approach and possible strategies, and decided that the initial session would need to overcome preconceptions,

stereotypes in thinking, and conditioned ways of responding. Once some of the barriers had been broken down, the atmosphere established, and thinking and felling encouraged, then the later sessions would develop from within the concerns and context of the workshops themselves - the children taking an active role. Initially a clear structure was provided based on a school-type topic chosen by the children in order to: show the way the topic can be expanded through brainstorming to overcome a narrow focus; get the children to re-experience the sensory and emotive quality of images related to the topic; generate creative expression stemming from such experiences; encourage reflection on the relevance of this exploration to an awareness of the universal implications of the topic, and encouraging the extension of the topic/theme into a creative form. This would serve to consolidate skills such as: expanding an apparently limited topic from the particular to the universal, relating the topic from objectivity and distance to subjectivity and closeness, using creative methods such as media, literature, poetry and photography to increase awareness of the topic/theme.

6.3.2. Structuring the Sessions.

The worksho s ran over a period of 10 weeks for 2 hourly sessions at both primary and secondary levels. These were initially structured in terms of:

- o Stimulation : through articles, news items, photographs, slides, poetry, literature, music, objects, experiments, etc. Aim was to increase awareness of sensory implications and personal involvement, raise questions and issues, and impressions relative to the quality to thought, feeling, perception.
- o Development: to integrate ideas and impressions generated about the theme/ idea into some creative form using colour, line, movement, sound, words, etc.
- o Reflection: To create distance in order to evaluate the relevance of the experience, to develop awareness of how others interpreted or experienced the theme, to develop aesthetic judgement, and create possibilities for further extension in following sessions.

6.3.3. Process of Evaluation.

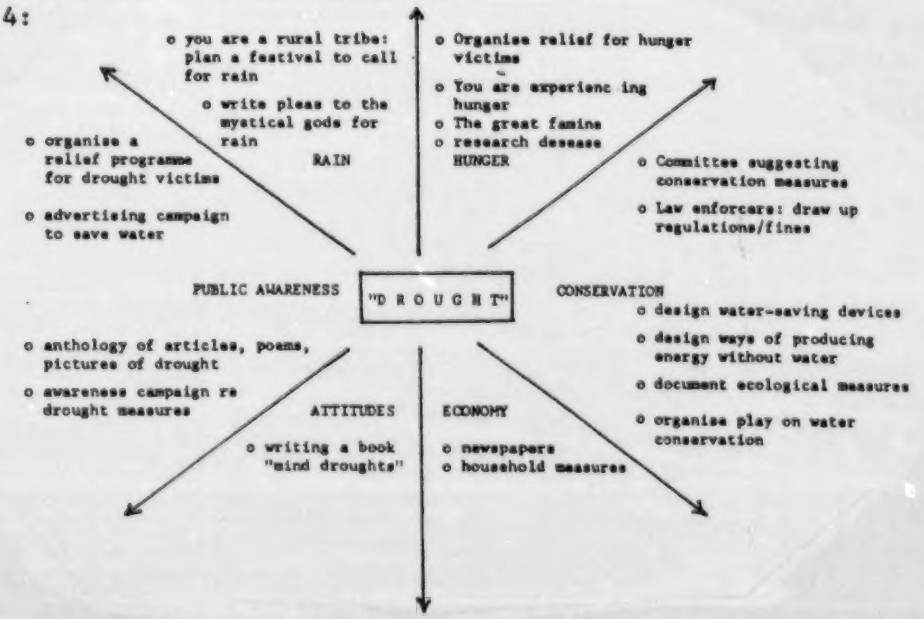
Evaluation was formative, in that teachers discussed objectives and strategies before and after each session, completing a questionaire on both their own and the children's responses; and summative, wherein each child was evaluated by

himself and the teacher in terms of his participation, and the whole series of workshops was evaluated by teachers, children and observers.

6.3.4. Development of the Workshops.

As the workshops progressed from an exploration of a topic, so they took on a nature in terms of the interest, ideas, and motivation of the group. For example, the topic "Drought", which was an urgent concern at the time and was prevalent in the media and school projects, developed into related themes of sterility, and incorporated myths and legends concerning rain rituals and fertility rites. A series of creative activities included expression of sensory images in painting, drawing of objects, writing of poetry and scenarios, and exploration of sounds and movements. The children chose to integrate this into a tape/slide programme, exploring the theme of "drought" through photographs they took, their paintings, sounds, etc. From here, sociodrama introduced areas of problem-solving, developing from sensory imgery to thinking levels and communication. Areas of the topic that had been generated in the brainstorming session were segmented into situations to allow an exploration of "universals" (a method of drama-in-education initiated by Dorothy Heathcote, Wagner (1976)). Options were developed, some of which are presented in the diagram below:

Diagram 4:


o you are a rural tribe: plan a festival to call for rain
o write pleas to the mystical gods for rain
RAIN
o Organise relief for hunger victims
o You are experienc ing hunger
o The great famine
o research desease
HUNGER
o organise a relief programme for drought victims
o advertising campaign to save water
o Committee suggesting conservation measures
o Law enforcers: draw up regulations/fines
PUBLIC AWARENESS
"D R O U G H T"
CONSERVATION
o design water-saving devices
o design ways of producing energy without water
o document ecological measures
o organise play on water conservation
o anthology of articles, poems, pictures of drought
o awareness campaign re drought measures
ATTITUDES
o writing a book "mind droughts"
ECONOMY
o newspapers
o household measures

Situations were improvised with the teacher entering the improvisation in a way which allowed them to ask questions, with roles such as scientist, news-

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caster, explorer, inspector, etc. After each improvisation there are moments of reflection for the children to discuss its relevance, how they felt and reacted, relating this to their daily lives. The relevance lies in making the improvisation in terms of real situations with which the children can identify (a central concept), so that they believe in the dilemma or problem and try to solve it realistically, exploring their own ideas.

6.4. General Evaluation.

In terms of the information gathered from teachers and students, the workshops served to provide a meaningful, relevant and enjoyable learning experience. Teachers interacted productively although, as one teacher stated, "we tended to be oversenstivè to each others needs at times, but were willing to be open and vulnerable and able to allow new experiences to occur and extend the pupil's experience without enforcing our own ideas." In the teachers' views, the children were involved, responsive, authentic, sincere, spontaneous and enthusiastic. Their thinking showed the criteria of fluency, flexibility, originality and elaboration to have been developed in the process of the workshops. As stated by one teacher:

"Responses of the children were highly individual: they were happy and relaxed and absorbed in what they were doing, but very interested in each others efforts, and worked well together in sharing ideas and building on each others ideas; discussions were exploratory about each others feelings, interests, thoughts, and images."

Teachers, not used to a qualitative form of evaluation, initially found it difficult to appraise the success of each particular session, other than the individual responses of the children, being reluctant to base this only on whatever product the sessions had generated (poems, paintings, dance, etc.) However, the periods of reflection after each session were seen as an important means of developing self-evaluation, seen and expressed by the children themselves. The students rated the workshops highly on several dimensions of the questionaire completed at the end of the workshops.

Such methods of evaluation are, however, obviously subjective measures, although appropriate to the process oriented approach. Further research is being conducted in terms of pre and post testing on measures of creativity to determine

the relevance of such a programme, particularly over a longer period. The programme must be seen as experimental in nature, which with time, will develop further understanding of its relevance through appropriate evaluation.

7. CONCLUSION.

Research in the area of validating programmes in developing creative thinking can have important relevance, not only for understanding its complex nature but for educational practice and the development of individual potential. The element of synergy will no doubt flaw many an investigator, and will remain a mystery of the creative inspiration of the human spirit. Education can but open doors of awareness and create a supportive and facilitating environment for its encouragement.

John Holt (1976) sees learning as being most effective,

"Above all, when we feel the wholeness and openness of the world around us and our own freedom and power and competence in it."

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